Before the
Federal Communications Commission
Washington DC 20554

In the Matter of	)	
	)	
Modification of Parts 2 and 15 of the	)	ET Docket No. 03-201
Commission's Rules for Unlicensed	)	
Devices and Equipment Approval	)	

Reply Comments of GlobespanVirata

Mitchell Lazarus
FLETCHER, HEALD & HILDRETH, P.L.C.
1300 North 17th Street, 11th Floor
Arlington, VA 22209
703-812-0440
Counsel for GlobespanVirata, Inc.

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Pursuant to Section 1.415 of the Commission's Rules, GlobespanVirata, Inc. files these reply comments in the above-captioned proceeding.[1]

GlobespanVirata here responds to that portion of the Comments of Sirius Satellite Radio, Inc. (filed Jan. 23, 2004) (Siriuss Comments) that seeks reduced out-of-band emissions for Part 15 devices operating in the 2400-2483.5 MHz band.[2]

Sirius defends its request by asserting that satellite DARS receivers are "uniquely susceptible" to out-of-band emissions from Part 15 devices.[3] Protecting the receivers, says Sirius, requires reducing Part 15 out-of-band limits to 8.6 μV/m at 3 meters[4] -- a 35 dB reduction below present levels.

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[1] *Modification of Parts 2 and 15 of the Commission's Rules for Unlicensed Devices and Equipment Approval*, 18 FCC Rcd 18910 (2003) ("Notice"). GlobespanVirata is a leading provider of DSL and wireless networking chip sets, software, and reference designs to leading global manufacturers of broadband access and wireless networking equipment. GlobespanVirata applies the industry's longest history in DSL and wireless networking development and deployment to support more than 400 customers.

[2] Sirius Comments at 4-6 and Appendix 1.

[3] *Id*. at 5.

[4] *Id*. at 5-6.

We show below that Sirius's request is procedurally improper, economically irresponsible, and arises solely from the inadequacies of Sirius's own system design. The Commission must summarily dismiss the request.

A. Summary

The Commission may not lawfully consider Sirius's request, as it is far outside the scope of the Notice of Proposed Rulemaking.

To reduce the Part 15 out-of-band limits, as Sirius requests, would jeopardize the commercial viability of unlicensed devices in the 2.4 GHz band. And, because every industry and sector has come to rely on these devices, the result would be widespread negative economic effects.

Moreover, the request is unwarranted. Sirius seeks relief only because it built a system so fragile as to barely be capable of operation. Sirius admits as much by having tacked on an expensive network of terrestrial repeaters. As it happens, the locations of those repeaters tends to coincide with significant densities of Part 15 devices, which should help to mitigate Sirius's interference concerns.

In the end, if Sirius has trouble serving its customers, Part 15 is not to blame. Indeed, the allowable out-of-band emissions from the most powerful Part 15 systems came down by more than 40 dB *after* Sirius bought its spectrum. The unreliability inherent in Sirius's satellite system, especially in urban areas, poses a much greater threat to service than any interference from Part 15 devices.

B. The Administrative Procedure Act Bars Sirius's Request.

The Administrative Procedure Act (APA) requires an agency to publish a proposed rule for comment prior to its adoption.[5] The present Notice of Proposed Rulemaking does not include Sirius's request. Therefore, absent a Further Notice, the Commission is barred from acting on the request.

Judicial precedent on the notice requirement is clear and consistent:

> Notice of a proposed rule must include sufficient detail on its content and basis in law to allow for meaningful and informed comment.[6]

The court had earlier explained:

> If the notice of proposed rule-making fails to provide an accurate picture of the reasoning that has led the agency to the proposed rule, interested parties will not be able to comment meaningfully upon the agency's proposals. As a result, the agency may operate with a one-sided or mistaken picture of the issues at stake in a rule-making.[7]

The statute and case law preclude the Commission from acting on Sirius's request. For that reason alone, the Commission must deny it.

C. A Grant of Sirius's Request Would Have Serious, Adverse Economic Consequences.

Unlicensed operation under Part 15 has evolved over the past two decades from toys and garage-door openers to become a major component of the Nation's telecommunications

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[5] 5 U.S.C. Sec. 553.

[6] *American Medical Ass'n v. Reno*, 57 F.3d 1129, 1132 (D.C. Cir. 1995) (remanding for adequate notice and comment).

[7] *Connecticut Light and Power Co. v. Nuclear Regulatory Comm'n*, 673 F.2d 525, 530 (D.C. Cir. 1982) (emphasis added), *cert. denied,* 459 U.S. 835 (1982). *See Home Box Office, Inc. v. FCC*, 567 F.2d 9, 55 (D.C. Cir. 1977) (notice must provide sufficient information to permit "adversarial critique"), *cert. denied,* 434 U.S. 829 (1977).

infrastructure. Unlicensed products in their own right are a multi-billion-dollar industry. More important, every other industry -- including public safety and law enforcement, manufacturing, retail, transportation, health care, education, energy, communications, and finance -- now depends on sophisticated unlicensed equipment for efficiency and global competitiveness.

Along with familiar consumer applications such as Wi-Fi, cordless phones, and countless others, Part 15 devices fill vital commercial, industrial, medical, and financial needs. A few examples:

- ***Commercial applications*** include wireless LANs and PBXs, retail cash registers and inventory control, airport baggage handling, package delivery, car rental services, automated meter reading and alarm services, and warehouse picking operations.

- ***Hospitals*** and other health care facilities use unlicensed devices for patient telemetry, inventory and billing, patient records, and bedside checks on medication.[8]

- ***Schools*** use unlicensed equipment for classroom Internet access and administrative functions.

- ***Stock transactions*** -- most of the transactions on the New York Stock Exchange are mediated by unlicensed wireless terminals.

- ***Internet access*** uses wireless communications links for broadband speeds at distance up to 40 km.

Unlicensed operations provide all of these industries with reliable, inexpensive, high-capacity radios that users can install and move as needed, without the costs and delays of licensing.

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[8] In February 2004, the FDA is expected to require that all hospital medications be uniformly labeled with bar codes to improve patient safety. Lauran Neergaard, *Bar codes on drugs aim to reduce hospital errors, deaths*, Associated Press (Dec. 9, 2003). Adoption of this rule will greatly increase the medical use of unlicensed wireless devices.

Most non-consumer unlicensed devices -- and recently, many consumer products as well -- favor the 2400-2483.5 MHz band. A sharp reduction in permitted out-of-band emissions in the DARS band at 2320-2345 MHz would greatly increase the cost of these devices -- if indeed they could be built at all. That in turn would push up costs in all of the industries that rely on unlicensed operation, and set adverse effects rippling through the economy. Considering that the benefits (if any) to Sirius are very limited, a grant of the request is decidedly against the public interest.

D. Sirius's Request is Technically Unwarranted.

Sirius asserts its receivers operate near the noise floor with just enough link margin to accommodate blockage, multi-path fading, and foliage attenuation.[9] Thus, Sirius asks the Commission to put impractically stringent limits on Part 15 devices to compensate for the fragilities it designed into its own system.

No one disputes that Part 15 users have an obligation not to interfere with Sirius, and to cease operation if such interference occurs.[10] Yet Sirius admits that its system is barely able to function under expected operating conditions.[11] Sirius has previously disclosed that its link margin for fading and attenuation is only 6.7 dB.[12] That is unlikely to be adequate for reliable commercial operation in anything but a line-of-sight application, because the cumulative effect

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[9] Sirius Comments at 5.

[10] 47 C.F.R. Sec. 15.5.

[11] Sirius Comments at 5.

[12] Petition for Rulemaking of Sirius Satellite Radio Inc. at Attachment 1 (filed Jan. 23, 2002), submitted as attachment to Comments of Sirius Satellite Radio Inc. in ET Docket 01-278, *Review of Part 15 and Other Parts of the Commission's Rules* (filed Feb. 12, 2002).

of blockage, attenuation, and fading into a mobile receiver will routinely exceed 6.7 dB. Sirius seems to agree, having invested in a network of terrestrial repeaters to supplement satellite reception.[13]

A prudent engineer will design for the environment in which the system must function. The DARS environment includes out-of-band emissions from lawfully operating Part 15 devices, a fact well known to Sirius when it bid on its spectrum. Sirius might have done better to take that into account at the design stage, rather than ignore it then and come to the Commission now.

Along with shoring up an unsuccessful design, Sirius's repeater network should also eliminate most Part 15 interference concerns. Repeaters are being deployed to put signals into locations subject to blockage and multi-path interference, such as urban canyons.[14] But these same areas have the greatest density of Part 15 devices. Sirius has not alleged that repeater transmissions will suffer interference from Part 15. On the open highway and in rural areas, where repeaters are unnecessary, Part 15 deployment is extremely sparse, so again no interference should result.

Ironically, a week after the DARS auction in April 1997,[15] the Commission significantly *reduced* the potential emissions from unlicensed devices into the DARS band. Prior to 1997, the rules required certain spurious emissions from spread spectrum radios to be attenuated by only 20 dB, while all other Part 15 out-of-band emissions were subject to the much tighter general

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[13] *Application for Special Temporary Authority to Operate Satellite Digital Audio Radio Service Complementary Terrestrial Repeaters*, File No. SAT-STA-20010724-00064, DA 01-2171 (Sept. 17, 2001).

[14] *Id*. at para. 1 & n.1.

[15] *See* American Mobile Radio Corp., 13 FCC Rcd 8829 (Int'l Bur. 1997); Satellite DC Radio, 13 FCC Rcd 7971 (Int'l Bur. 1997).

limits in Section 15.209.[16] Spread spectrum radios were by far the most powerful permitted in the 2400-2483.5 MHz band. But shortly after the DARS auction concluded, the Commission subjected all out-of-band emissions in the DARS band (and other "restricted bands") to the much more stringent limits of Section 15.209.[17] This action brought down maximum spread spectrum emissions in the DARS band by more than 40 dB! Thus, at the time it placed its bids, Sirius knowingly faced a much worse interference threat from Part 15 than it does today.

Finally, Sirius's proposal is highly unrealistic. Sirius requests a maximum aggregate interference level of 8.6 μV/m at 3 meters.[18] This is fully 35 dB below the present limits[19] -- below the thermal noise floor and immeasurably low, given the Commission's currently accepted methods. The only comparable emissions limit anywhere in the Commission's Rules governs certain ultra-wideband devices in the band covering GPS operation.[20] Unlike DARS, GPS is a safety-of-life service protected by a strict definition of harmful interference.[21] Yet the Report and Order adopting the ultra-wideband rules provided no technical justification for the

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16 *Spread Spectrum Transmitters,* 12 FCC Rcd 7488 at para. 46 (1997).

17 *Id*. at paras. 46-47; 47 C.F.R. Sec. 15.247(c).

18 Sirius Comments at 6.

19 *See* 47 C.F.R. Secs. 15.205, 15.209.

20 47 C.F.R. Secs. 15.515, 15.517, 15.519.

21 47 C.F.R. Sec. 15.3(m).

extraordinarily low GPS-band limits, relative to other Part 15 devices.[22] There is certainly no rationale for extending those numbers to other devices at other frequencies.[23]

CONCLUSION

Sirius's request has no place in this proceeding. Apart from being procedurally barred under the APA, it would seriously hinder Part 15 operation and the industries that depend on it, solely to accommodate Sirius's own inexpedient decisions in the past. The Commission should reject the request without consideration.

Respectfully submitted,

Mitchell Lazarus
FLETCHER, HEALD & HILDRETH, P.L.C.
1300 North 17th Street, 11th Floor
Arlington, VA 22209
703-812-0440
Counsel for GlobespanVirata, Inc.

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[22] *Ultra-Wideband Transmission Systems*, 17 FCC Rcd 7435 (2002).

[23] Additionally, Sirius seeks to limit "aggregate emissions" from unlicensed devices. Sirius Comments at 6. Such a rule is not only unprecedented, but could neither be implemented nor enforced. The manufacturer of a Part 15 device has no control over where it will be used, and has no way to control the aggregation of devices or their emissions.

SERVICE LIST

Chairman Michael Powell
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Commissioner Kathleen Q. Abernathy
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Commissioner Michael J. Copps
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Commissioner Kevin J. Martin
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Commissioner Jonathan S. Adelstein
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Edmond J. Thomas, Chief, OET
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Julius P. Knapp, Deputy Chief, OET
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Bruce A. Franca, Deputy Chief, OET
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

James D. Schlichting, Deputy Chief, OET
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Michael Marcus
Associate Chief for Technology, OET
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Alan J. Scrime, Chief
Policy & Rules Division, OET
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Ira Keltz, Deputy Chief
Policy & Rules Division, OET
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Geraldine Matise, Deputy Chief
Policy & Rules Division, OET
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Karen E. Rackley, Chief
Technical Rules Branch, OET
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Neal McNeil
Technical Rules Branch, OET
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

John A. Reed
Technical Rules Branch, OET
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554